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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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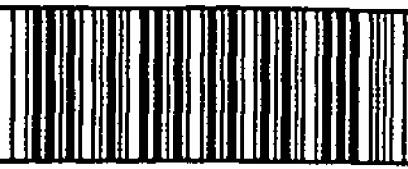
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No. <b>08/236,933</b>	Applicant(s) <b>Huffman, et al.</b>
Examiner <b>Peter T. Di Mauro</b>	Group Art Unit <b>1754</b>



Responsive to communication(s) filed on 1 Nov 1999

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 45-49, 51-84, 96, 181, and 203-248 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 45-49, 51-84, 96, 181, and 203-248 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Initially, it is noted that the examiner is in receipt of certain Attachments or Exhibits which appear to have been submitted by Applicants. These Exhibits include a videotape, certain articles, and a copy of a Final Decision in the matter of interference involving a predecessor application of the instant case. All of these Exhibits have been noted, and placed in the file wrapper. Please note, however, that Applicants do not appear to have requested that these "Exhibits" be considered as part of any "Information Disclosure Statement, as the latter term is defined in MPEP 609.

Claims 46-49, 51-84, 96, 181, 203-248 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 45, 181 and 233-234 and those dependent therefrom, it is unclear how much constitutes amounts capable of being extracted in "solid" form.

If, arguendo, a microgram of C60 qualified as a solid, would a process which produced a kilogram of soot which in toto contained microgram C60 (ie., a parts-per-billion concentration) be within the claims (since 1 microgram C60 is "capable" of being extracted and "capable" of yielding 1 microgram solid C60?); does the claimed process depend upon scale it is run, i.e., how much "sooty carbon product" is made or collected, or whether the process is batch or continuous?

Note that a solid article of colloidal gold can be  $1.7 \times 10^{-7}$  cm in size. Is this the order of magnitude which applicants intend?

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In claim 83, lines 4-7 and in claim 84, lines 5-7, and in claim 22, it is unclear as to what is the scope of “amounts (or quantities) (of C60) sufficient to be capable of producing a ... colored solution when extracted with sufficient (or effective) amounts of benzene”.

Would a metric ton of “sooty carbon product” containing a gram. of C60 (i.e., a ppm C60 concentration), and extracted with a liter of solvent, be within the scope of the claims (since quantities on the order of 1 gram C60 can impart color to solvent quantities on the order of one liter)?

In claims 234 and those dependent therefrom, it is unclear what is the scope of “discernible”. What analytical means are implied to “discern” a solid? Note that an electron microscope can sometimes be used to “discern” small solids such as viruses. Is this the scope which applicants intend?

Claims 45-49, 51-82, 96, 203 and 232 are rejected under 35 U.S.C. 12, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no descriptive support for the term “macroscopic”. One of ordinary skill reading the specification as originally filed would not have reasonably expected claims to the large-scale “macroscopic” amounts which are now being claimed.

Claims 45-49, 51-82, 96, 203 and 232 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the preparation of a two-micron thick C60

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coating, does not reasonably provide enablement for all macroscopic amounts of C60. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Note that the specification is not a commensurately enabling one, since the scope of the claims is broadened from the original disclosure, in that they now embrace formation and isolation of very large quantities of C60, while original disclosure's literal language only supports product of C60 quantities sufficient to produce 2-micron thick coatings.

There is no disclosure supporting or describing larger quantities of C60 as are now embraced by the claims.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

Claims 45-49, 51-84, 96, 181, 203-248 are provisionally rejected under judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 57-63 and 68-87 of copending Application No. 08/486,669. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because the respective claims only differ in the functional recitation of how much C60 fullerene is made in the carbon vaporization process. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have carried out the process of the instant claims, in view of the copending '669 application, because the claims of said copending application is directed to the same production and recovery of the same C60 as are the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments filed November 1, 1999 have been fully considered but they are not persuasive.

Initially, it is noted that, upon reconsidered and in view of the Kratschmer Declaration and accompanying arguments, it appears that the Fostiropoulos + Kratschmer article cannot support the section 103 rejection set forth in the last Office action. Although two lines of reasoning have been previously used in an attempt to infer co-inventor-ship to Fostiropoulos (namely, has appearance as an author in the article applied in the last action; and the and the discussion in the Baggott book), neither are considered sufficient against the facts alleged in the Kratschmer Declaration, taken in view of the Katz decision. In other words, in the absence of other, counter veiling facts (e.g., Declarations contrary to that of Kratschmer), the inference of not maintained at this time.

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All of the claims, however, remain rejected under the judicially-created doctrine of obviousness - type double patenting, as well as under section 112, paragraphs 1 and 2.

With regards to the double patenting rejection, applicants argue that this rejection, is “not applicable”, because the “subject matter of the present application is not directed to” the same invention as claimed in copending ‘669 application.

However, a test of obviousness-type double patenting involves the question of whether the claims of the copending application, anticipate or render obvious the instant claims. In the present situation, the claims of copending ‘669 are directed to evaporating elemental carbon in the presence of an inert quenching gas, and performing extraction upon the resultant sooty carbon products, e.g., solvent extraction.

Substantially the same process steps are performed in the claims of both application, and issuance of both applications without a timely filed terminal disclaimer on the record in one or the other application is not permitted under the Doctrine.

With respect to the outstanding rejections under 35 U.S.C. 112, second paragraph, note that following.

Applicants argue that the language of “solid” form means that C60 is present in amounts which can be with human eye.

The rejection is maintained, in part on this grounds because the language of the claims does not particularly and distinctly point out what Applicants regard as the intent of the claims. Solid carbon - 60 is arguably present in the solid mineral ore called schungite, albeit that the

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molar amount is small. Even the claimed "sooty carbon product" contains solid C60 (it is not a gas or liquid or plasma), and so use of a phrase tantamount to saying that extraction of C60 as a "solid" form said soot, does not change said soot at all!

Although Applicants may be correct in noting that "lower limits need not be recited in claims", the crux of the rejection of "solid", is that Applicants' interpretation of solid C60 contradicts the plain meaning of "solid", which includes solid "sooty carbon product" and solid schungite.

Applicants argue that the language pertaining to "amounts of C60" which are capable of producing a "colored solution", is objective and clear, since color can be seen easily.

However, as a definite statement of any particular amount of C60, this language fails the test. The examiner does not dispute that color can be seen. Rather, the question is, "precisely how much C60 has to be present in a substance for it to produce a colored solution"? To re-iterate the rejection, it appears that a metric ton of some solid which contains one part - per - million C60, can impart color to a liter of benzene (as long as the benzene extractant were applied in the proper manner). The claims do not point out whether or not such a scenario is included or excluded.

Applicants argue that "discernible" is used in its "everyday" meaning. Yet, there is no definition for the term in applicants' specification, and objects can be discerned with the aid of tools such as electron microscopes.

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Applicants argue against the first paragraph by stating that the specification provides examples of a C60 product in the form of a colored powder; thus, since something was "seen with the naked eye", there is paragraph - 1 support from "macroscopic".

The examiner strongly disagrees.

There is nothing in the original specification which conveys everything connoted by the term "macroscopic". Seeing crystals in a microscope does not convey it; forming a 2-micron thick coating does not convey it. Finally Example 1 produces a coating and a powder containing C60. How much powder, is not stated. "Macroscopic" is not defined by any of these examples; if the specification does not define quantitatively what is "macroscopic" in the present claims, it cannot have described it.

Applicants appear to be of the opinion that the Board Decision attached as Exhibit 1, concluded that the applicants had in their possession a process of producing C60 in "macroscopic" amounts.

However, the Board merely noted that the word as it appear in the claim had to be given some dictionary definition, simply because the specification neither uses that phrase or defines it in any way!

With regards to the other exhibits which assertedly indicate that applicants had in their possession a process for forming "macroscopic" amounts, all of these were not contemporaneous with the instant specification, having been published later. The significance is as follows: it is now realized by experts such as Kroto that a process described in the original specification can lead to

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“macroscopic” amounts of C60. But when did the realization come about? The original specification does not convey, to an ordinary routineer, that Applicants had that realization at the time of filing.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Peter DiMauro at telephone number (703) 308-0680.

Peter DiMauro/om  
February 14, 2000

*Tom Durn*  
TOM DURN  
PRIMARY EXAMINER  
A.U. 1754